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GLOBAL CLIMATE CHANGE: CENTRAL AMERICA

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Through the U.S.-Central American Joint Accord and USAID's capacity-building and vulnerability-reducing measures, the environmental situation in Central America is greatly improving. As environmental problems are solved, the positive effects are expected to spill over into other sectors, improving economic and social conditions as well.

Background. Despite expanded trade and economic growth in Central America, poverty continues to persist. Internal barriers to trade among countries remain, further hampering expanded regional trade and greater participation by smaller businesses in regional economic activity. In addition, recent border disputes are affecting regional cooperation agendas. Adding to the difficulties faced by Central American countries are ongoing environmental concerns. Degradation of natural resources continues, threatening the region's rich biodiversity and the future potential of nontraditional agriculture, sustainable forestry, and tourism, as well as increasing the region's vulnerability to future natural disasters. USAID's regional environmental program in Central America has played a unique role in helping the countries in the region address these challenges and achieve the shared goal of sustainable regional development. The Mission has also furthered U.S. interests by stemming global and regional threats from environmental and resource degradation and loss of biodiversity.

Sector-Specific Climate Change Activities. USAID's Central America Regional Program (G-CAP) is based in Guatemala City and manages the Central America regional assistance programs. G-CAP activities encompass the countries of Guatemala, Honduras, El Salvador, Nicaragua, Panama, Costa Rica, and Belize. G-CAP works primarily with the socially and economically disadvantaged populations living in poverty, with special emphasis on the rural indigenous poor whose lives have been most seriously affected by internal civil conflict. In addition to low incomes, these populations have limited opportunities for economic advancement, lack access to social services, and have limited access to, or influence over, policymaking processes. USAID/G-CAP's environment program seeks to help the communities of Central America address key issues such as protected area management and vulnerability to climate change and is thus providing these communities with the capacity to understand and deal with these problems. Working primarily under the auspices of the U.S.-Central American Joint Accord (CONCAUSA), USAID's Regional Environmental Program for Central America (PROARCA) is able to address the key concerns of Central Americans.

U.S.-Central American Joint Accord (CONCAUSA). In 1994, Central American leaders and U.S. government officials crafted the "Declaración Conjunta Centroamérica – USA" (CONCAUSA), a joint accord between the United States and the seven leaders of Central America. The CONCAUSA agreement is both a declaration and an action plan designed to jointly achieve sustainable development objectives – specifically, protecting

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USAID/G-CAP's partners in climate change activities include*:

- Center for Sustainable Development in the Americas (CSDA)
- Central American Commission on the Environment and Development (CCAD)
- Central American Integration System (SICA)
- International Energy Agency (IEA)
- National Aeronautics and Space Administration (NASA)
- National Oceanic and Atmospheric Administration (NOAA)
- United Nations Development Program (UNDP)
- U.S. Department of Energy (DOE)
- U.S. DOE's Brookhaven National Laboratory (BNL)
- U.S. DOE's Lawrence Berkeley National Laboratory (LBNL)
- U.S. DOE's Oak Ridge National Laboratories (ORNL)
- U.S. Forest Service
- U.S. Environmental Protection Agency (EPA)
- U.S. Department of Interior (DOI)
- U.S. Department of Agriculture (USDA)
- U.S. Geological Survey (USGS)

* Because partners change as new activities arise, this list of partners is not comprehensive.

the region's rich biodiversity, strengthening environmental legislation, expanding energy efficiency, and promoting more open trade. In recent years, based on a great deal of progress in raising Central American environmental standards, improving the management of environmental issues, and opening markets to trade and investment, the action plan was expanded to include climate change and disaster preparedness as new areas of cooperation. The renewed agreement calls for:

- Intensifying efforts to address climate change through scientific research
- Estimating and monitoring greenhouse gases
- Investing in forestry conservation
- Enhancing energy efficiency
- Utilizing new environmental technologies
- Enhancing capacity to adapt to climate change
- Cooperating to better understand its regional impact

Regional Environmental Program for Central America (PROARCA). USAID/G-CAP's Regional Environmental Program for Central America (PROARCA) originates from CONCAUSA. Since 1996, USAID/G-CAP has supported the agenda of the Central American Commission on the Environment and Development, which is part of the Central American Integration System. After working on conservation and natural resource management topics in the region for five years (1996-2001), the program began its second phase (2002-2007) to focus on improving environmental management in the Mesoamerican Biological Corridor. To achieve this regional objective, USAID/G-CAP focuses its work on four components that aim to:

- Improve the management of protected areas
- Promote environmentally friendly products in various markets
- Harmonize environmental policies
- Promote the use of less-polluting technologies in the municipal and private sectors

Protected Area and Sustainable Forest Management. Examples of USAID/G-CAP's objectives in action include a variety of measures, particularly relating to resource management issues. USAID/G-CAP is providing training on monitoring of protected area management status to 22 government and nongovernmental organizations. This training, together with the implementation of a monitoring system, allows protected area management organizations in Central America to monitor how well areas are being managed and take actions to remedy deficiencies. USAID/G-CAP has also developed a bio-economic fisheries model for the Gulf of

Honduras that forecasts the social, economic, and ecological impacts of conservation policies and regulations.

USAID/G-CAP is improving management capacity in five transboundary biodiversity hotspots in all seven countries. In Honduras and Guatemala, this is being achieved through financial management plans to help administer and secure funds for protected area management of approximately 2.5 million hectares.

Finally, under USAID/G-CAP's green market component, sustainable forest management to support compliance with the requirements of the Forest Stewardship Council (FSC) is being promoted. This is being accomplished through forest management planning, training in conservation value forest methodology, and monitoring the environmental impact of forestry activities. Compliance with the FSC increases economic opportunities for the communities through the sale of certified timber and through job opportunities in the timber industry. It also reduces illegal deforestation and slash-and-burn agriculture. Under the green market component, USAID/G-CAP is also supporting the adoption of best practices in the production of coffee, cacao, and bananas. These new methodologies will reduce deforestation and soil degradation rates.

Capacity Building. USAID/G-CAP is working in collaboration with the U.S. Department of Energy (DOE) to increase the capacity of Honduras, El Salvador, and Panama to model CO2 emissions from the energy sector and devise cost-effective emissions reductions policies. This is being achieved by helping the United Nations Development Program-sponsored climate change programs build databases for the energy sector and run the MARKAL-Macro model. The MARKAL model, originally developed at the Brookhaven National Laboratory under a joint DOE-International Energy Agency project, is a generic framework tailored by the input data to represent the evolution of a specific energy system and its associated environmental emissions over time at the local, national, or regional level. Since the model identifies the most cost-effective technology options in light of a country's energy resources, its output identifies potential markets of climate-friendly technologies. Intensive training on model building and application is being provided to climate change program personnel and collaborating university staff.

An additional USAID/G-CAP capacity building activity, in collaboration with the DOE's Lawrence Berkeley National Laboratory (LBNL) and the Center for Sustainable Development in the Americas, designed and organized a series of regional training workshops for Central Americans. The first activity provided hands-on training to Central Americans on how to develop baselines for the energy sector, as well as how to evaluate clean energy projects using the ProForm Model. ProForm is an Excel-based software tool designed by LBNL to support a basic assessment of the environmental and financial impacts of renewable energy and

energy efficiency projects. As part of this regional training, LBNL translated ProForm into Spanish, collected and analyzed data from four potential clean energy generation projects in Central America, and provided instruction on how to assess both the environmental and financial impacts of clean energy projects. Building on this workshop, a second training activity was focused on the monitoring, evaluation, reporting, verification, and certification (MERVC) of renewable energy and energy efficiency projects. The objective of the course was to educate and inform key personnel in Central American countries on the MERVC issues involved in the design, development, and implementation of projects to reduce greenhouse gas (GHG) emissions. All of these capacity-building activities provide Central America with the training and tools necessary to develop and assess GHG mitigation projects.

Reducing the Vulnerability of Central America. To reduce Central America's vulnerability to climatic impacts, USAID is taking several measures, including working to improve disaster preparedness in Central America. As a result, USAID/G-CAP, in collaboration with U.S. government agencies and Central American representatives, has:

- Installed a version of the National Weather Service Forecast System in the Rio Lempa watershed
- Developed a geographic information system (GIS) in the Rio Lempa watershed that focuses on increasing the information base for disaster management
- Enhanced the capacity of Central America to receive and display rainfall estimates throughout the region on a real-time basis
- Promoted the use of green products and services as well as the implementation of less-polluting technologies in industries that pose threats to key natural marine and terrestrial resources

New Partnerships to Mitigate Climate Change Impacts. Under the CONCAUSA Joint Accord, USAID/G-CAP is initiating two new partnerships. In collaboration with the U.S. Environmental Protection Agency, national GHG inventory systems crucial to improve monitoring and verification of GHG levels and trends in emissions throughout the Central America region will be developed. The improvement of data inputs provided through this activity will greatly increase the usefulness of the information in development planning and assist in the reduction and/or mitigation of GHG emissions.

Furthermore, in collaboration with the National Aeronautics and Space Administration and DOE's Oak Ridge National Laboratories, a coordinated national land use monitoring system crucial to improve monitoring and verification of carbon emissions throughout the Central America region will be developed. In addition, climate change impacts will be modeled, and predictive tools for natural disasters will be provided to decision makers, reducing vulnerability to climate change impacts.

These new partnerships will assist the Central America region in fulfilling its specific international obligations under the United Nations Framework Convention on Climate Change and assist individual countries with reducing vulnerability and increasing their capacity to adapt or mitigate climate change impacts. Additionally, it will help ensure long-term economic competitiveness in the Central American region through appropriate development.

For more information on G-CAP's climate change activities, visit the USAID Web site at:

- **http://www.usaid.gov**

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